

## § 28.385

(e) *Insulation.* Except as provided in paragraphs (e)(1) and (e)(2) of this section, insulation must be noncombustible.

(1) In machinery spaces, combustible insulation may be used for pipe and machinery lagging.

(2) In cargo spaces and refrigerated compartments of service spaces, combustible insulation may be used.

(f) *Vapor barrier.* Where insulation of any type is used in spaces where flammable and combustible liquids or vapors are present, e.g., machinery spaces and paint lockers, a vapor barrier which covers the insulation must be provided.

(g) *Paint.* Nitrocellulose or other highly flammable or noxious fume producing paints or lacquers must not be used on the vessel.

(h) *Mattresses.* Polyurethane foam mattresses are prohibited.

NOTE: The U.S. Department of Commerce Standard for Mattress Flammability (FF4-72.16) in 16 CFR part 1632, subpart A, applies to each mattress.

(i) *Fiber reinforced plastic.* When the hull, a deck, deckhouse, or superstructure of a vessel is partially or completely constructed of fiber reinforced plastic, the resin used must be fire retardant.

(j) *Cooking areas.* Vertical or horizontal surfaces within 0.9144 meters (3 feet) of cooking appliances must be composed of noncombustible material or covered by noncombustible material. Curtains, draperies, or free hanging fabrics are not permitted within 0.9144 meters (3 feet) of cooking appliances.

[CGD 88-079, 56 FR 40393, Aug. 14, 1991; 56 FR 49822, Oct. 1, 1991, as amended by CGD 96-046, 61 FR 57275, Nov. 5, 1996; CGD 95-028, 62 FR 51197, Sept. 30, 1997]

### § 28.385 Structural fire protection for vessels that operate with more than 49 individuals on board.

(a) *Applicability.* Each vessel that operates with more than 49 individuals on board must comply with the requirements of this section in addition to the requirements of § 28.380.

(b) *Construction.* The hull, structural bulkheads, columns and stanchions must be composed of steel. Superstructures and deckhouses must be

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constructed of noncombustible material.

(c) *Protection of accommodation spaces.* A bulkhead or deck separating an accommodation space from a control station, machinery space, cargo space, or service space must be constructed of noncombustible material.

[CGD 88-079, 56 FR 40393, Aug. 14, 1991; 56 FR 49822, Oct. 1, 1991]

### § 28.390 Means of escape.

(a) Each space which is used by an individual on a regular basis or which is generally accessible to an individual must have at least two widely separated means of escape. At least one of the means of escape must be independent of watertight doors. Subject to the restrictions of this section, means of escape include normal exits and emergency exits, passageways, stairways, ladders, deck scuttles, and windows.

(b) At least one of the means of escape from each space must provide a satisfactory route to weather.

(c) Each door, hatch or scuttle used as a means of escape must be capable of being opened by one individual, from either side, in both light and dark conditions, must open towards the expected direction of escape from the space served, and if a watertight door be of the quick acting type.

(d) Each deck scuttle which serves as a means of escape, must be fitted with a quick-acting release and a device to hold the scuttle in an open position.

(e) Each foothold, handhold, ladder, or similar structure, provided to aid escape, must be suitable for use in emergency conditions and must be of rigid construction.

(f) A window or windshield of sufficient size and proper accessibility may be used as one of the required means of escape from an enclosed space.

[CGD 88-079, 56 FR 40393, Aug. 14, 1991, as amended by USCG-2008-0906, 73 FR 56509, Sept. 29, 2008]

### § 28.395 Embarkation stations.

Each vessel must have at least one designated survival craft embarkation station and any additional embarkation stations necessary so that an

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embarkation station is readily accessible from each accommodation space and work space. Each embarkation station must be arranged to allow the safe boarding of survival craft.

### § 28.400 Radar and depth sounding devices.

(a) Each vessel must be fitted with a general marine radar system for surface navigation with a radar screen mounted at the operating station.

(b) Each vessel must be fitted with a suitable echo depth sounding device.

### § 28.405 Hydraulic equipment.

(a) Each hydraulic system must be so designed and installed that proper operation of the system is not affected by back pressure in the system.

(b) Piping and piping components must be designed with a burst pressure of not less than four times the system maximum operating pressure.

(c) Each hydraulic system must be equipped with at least one pressure relieving device set to relieve at the system's maximum operating pressure.

(d) All material in a hydraulic system must be suitable for use with the hydraulic fluid used and must be of such chemical and physical properties as to remain ductile at the lowest operating temperature likely to be encountered by the vessel.

(e) Except for hydraulic steering equipment, controls for hydraulic equipment must be located where the operator has an unobstructed view of the hydraulic equipment and the adjacent working area.

(f) Controls for hydraulic equipment must be so arranged that the operator is able to quickly disengage the equipment in an emergency.

(g) Hydraulically operated machinery must be equipped with a holding device to prevent uncontrolled movement due to loss of hydraulic system pressure.

(h) A nonmetallic flexible hose must only be used between two points of relative motion, including a pump and piping system, and must meet SAE J 1942.

(i) Each nonmetallic flexible hose and hose assembly must be installed in accordance with the manufacturer's rating and guidelines and must be limited to a length of not more than 30

inches (0.76 meters) in an application not subject to torsional loading.

### § 28.410 Deck rails, lifelines, storm rails, and hand grabs.

(a) Except as otherwise provided in paragraph (d) of this section, deck rails, lifelines, grab rails, or equivalent protection must be installed near the periphery of all weather decks accessible to individuals. Where space limitations make deck rails impractical, hand grabs may be substituted.

(b) The height of deck rail, lifelines, or bulwarks must be at least 39½ inches (1 meter) from the deck, except, where this height would interfere with the normal operation of the vessel, a lesser height may be substituted.

(c) All deck rails or lifelines must be permanently supported by stanchions at intervals of not more than 7 feet (2.3 meters). Stanchions must be through bolted or welded to the deck.

(d) Portable stanchions and lifelines may be installed in locations where permanently installed deck rails would impede normal fishing operations or emergency recovery operations.

(e) Deck rails or lifelines must consist of evenly spaced courses. The spacing between courses must not be greater than 15 inches (0.38 meters). The opening below the lowest course must not be more than 9 inches (0.23 meters). Lower courses are not required where all or part of the space below the upper rail is fitted with a bulwark, chain link fencing, wire mesh, or an equivalent.

(f) A suitable storm rail or hand grab must be installed where necessary in a passageway, at a deckhouse side, at a ladder, and a hatch where an individual might have normal access.

(g) A stern trawler must have doors, gates, or other protective arrangements at the top of the stern ramp at least as high as adjacent bulwarks or 39½ inches (1 meter), whichever is less.

[CGD 88-079, 56 FR 40393, Aug. 14, 1991; 56 FR 49822, Oct. 1, 1991]

## Subpart E—Stability

### § 28.500 Applicability.

This subpart applies to each commercial fishing industry vessel which is 79 feet (24 meters) or more in length that is not required to be issued a load line